NEVADA NATIONAL NNSS SECURITY SITE

# ONE VOICE

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A Publication for the Nevada Enterprise (NvE) Complex

## Cemented in History

NNSS, Science Bowl get medallions at the NATM.

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## Tunnel Recovered from Historic Storm

U25X Tunnel repair was vital for End-to-End project.

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## Outstanding Job!

NSTec Performance Awards recognize exemplary work.

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# It's Official: NNSS has New Logo

## *Design encompasses the NvE's mission*

**By *OneVoice* Staff Reports**

The Nevada Enterprise has unveiled the new logo of the Nevada National Security Site (NNSS) that is more modern and encompasses the entirety of the Nevada Enterprise (NvE).

NEVADA NATIONAL NNSS SECURITY SITE

The old logo and its bold outline of the Site is now replaced with a contemporary design that has thinner, more streamlined letters. A blue swoosh at its side soars toward a blue star, reflecting "one NNSS"—one mission, one entity moving forward.

The new logo eliminates the Site's outline because our mission is less about the NNSS itself and more about the work all the NvE organizations do at the Site and outside of it, said Steve Lawrence, manager of the National Nuclear Security Administration's Nevada Field Office (NNSA/NFO). Removing a visual tie to the shape of the Site helps foster the mission rather than the location.

"Our old NNSS logo spoke to the proud legacy of the Site's importance. But the work we do happens at several locations nationwide, not just in Nevada, so this new design is a statement of the many talents and capabilities demonstrated beyond the Site itself. I am proud to unveil this new Site logo that represents all of the work we do every day," said Lawrence.

Each company will have the capability to identify themselves in the logo by displaying their organization's name at the right of the swoosh.

At his all-hands meeting in April, National Security Technologies President Jim Holt proudly announced that the new logo "took a long while and a cadre of personnel, all the way up to headquarters, to get this approved. But it finally happened and I am so proud of it because it's a symbol of the NNSS' accomplishments and outcomes we all wish to achieve. It's important how we represent national security."

The NFO and NSTec collaborated on a number of designs, from which they had many to choose. After careful review, the team presented their top choices to NNSA headquarters in Washington, D.C. Great care was taken in what "message" the NNSA wanted the logo to convey. As the Site's name changed in 2010, so too would its designed image eventually change.

# NNSS's JOLT II Technology Aids National Security

**By *OneVoice* Staff Reports**

The Nevada National Security Site (NNSS) offers a wealth of resources to help industry develop new products and services that will contribute to energy independence, enhance national security, protect the environment and increase economic prosperity.

In that light, the NNSS Technology Transfer Program enables industry, small businesses, universities and other government agencies access to NNSS applied science, people and infrastructure. NNSS has seized upon the benefits of this program by transferring one of its technologies, called JOLT II, to the private sector. JOLT II is a small portable electronic device which lets local, state and federal bomb technicians and explosive ordinance disposal technicians assess improvised explosive devices. JOLT II improves the accuracy of X-ray exposures to enable the operator to more effectively eliminate the threat.

The JOLT series of devices was developed at the Remote Sensing Laboratory's Nellis' Special Programs division for the Department of Energy's National Nuclear Security Administration.

"Last year, we transferred JOLT II technology to several U.S. companies. Currently, two private companies, Tactical Electronics (www.tacticalelectronics.com) and WMDTech (www.wmdtech.com), are producing their versions of the device for sale. Tactical Electronics' JOLT PRO (their enhanced version of JOLT II) was recently showcased at the National Shooting Sports Foundation Shot Show conference in Las Vegas. This transfer of one of our technologies that enhances U.S. economic competitiveness assures value for the consumer and is a great success for the NNSS," said Robert Koss, manager of NNSS' Strategic Development Office.


*This article does not constitute an endorsement of any particular company or product.*

## NvE Executive's Corner

**By Jim Holt, President, National Security Technologies (NSTec)**

In my all-hands meeting in January, I talked about our great performance in fiscal year (FY) 2015. I want to re-emphasize that performance and again indicate the score we received. An overall 88 for NSTec put us at number three in the National Nuclear Security Administration Complex, with Kansas City and Lawrence Livermore National Laboratory only a couple of points above us.

Our performance is something everyone should be proud of. To be at the top takes everyone working together. Everyone is part of this accomplishment regardless of position or responsibilities. It takes everyone in every job to accomplish our mission.

Now let's talk about FY 2016. We find ourselves half way through the fiscal year with many priorities left to complete. In my all-hands, I talked about some of these priorities, including the list of essential or top priorities for FY16:

- The requirement to change the nuclear categorization from Hazard Category 3 to 2 in subcritical experiments
- Execute Source Physics Experiments 5 & 6 (SPE)
- To begin installation of the Device Assembly Facility's ARGUS security system
- Develop a new waste cell at the Radiological Waste Management Complex
- The P-Tunnel modifications work for the Defense Threat Reduction Agency
- Implementation of the Enhanced Capabilities for Dynamic Experiments, including a new diagnostics capability for using neutrons produced from our own dense plasma focus capability

These six are must-dos for FY16, but there are many more areas that will and must be accomplished in FY16. We have executed the Joint Actinide Source Physics Experimental Research (JASPER)'s surrogate Shot 139 with 100 percent of the data successfully acquired. JASPER is an outstanding example of superb operational excellence in a high-hazard experimental environment. They make it look easy, but it's not. The JASPER success takes everyone working in a team effort to bring such success to fruition. We have also made great progress in the SPE preparation.

There are many more examples of the great work done across NSTec. Everyone's job counts in our successes, whether it's custodial services conducting their responsibilities, food services preparing our meals, maintenance personnel maintaining facilities and equipment, the safety professional keeping us safe, the business professional making sure our business runs smoothly or the scientists and engineers planning and executing one-of-a-kind experiments in the unique environment of the Nevada National Security Site or at our other locations. NSTec is a team of professionals that work together to conduct a wide range of unique activities and services that fulfill our mission requirements for our customers.

Be proud of our team. I am.

**Jim**

# NNSS, Nevada Science Bowl Get Cemented in History

**By *OneVoice* Staff Reports**

Two special medallions in Las Vegas, Nev., were placed in the brick-lined History Walk at the National Atomic Testing Museum: logos of the 65th Anniversary of the Nevada National Security Site (NNSS) and the 25th Annual Nevada Science Bowl.

The NNSS is celebrating 65 years since its establishment on Dec. 18, 1950, as well as its first nuclear test on Jan. 27, 1951.

The Nevada Science Bowl is the premiere academic competition in Nevada among high school and middle school students. Science Bowl teams demonstrate their knowledge of the sciences in a fast-paced "Jeopardy"-style format. See News Briefs on p.5 for the 2016 Nevada Science Bowl winners.

Photo: Dan Burns

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NNSA National Nuclear Security Administration

# Scientists Study Nevada's State Animal at the NNSS

By Nikki Soto, NSTec

His massive horns curl over his ears and weigh more than 20 pounds. But that doesn't slow down one desert bighorn sheep ram that has been set free at the Nevada National Security Site (NNSS).

Six desert bighorn sheep were captured and studied in a major Site-wide undertaking led by the U.S. Geological Survey (USGS) last November.

The state animal of Nevada, desert bighorn sheep were a rare sight at the NNSS for almost 50 years, with only eight recorded observations between 1963 and 2009. But in the past seven years, many animals have been observed by NNSS biologists and wildlife cameras during a mountain lion study in the Site's western and southern portions.

In order to better understand this sheep population and where they came from, a helicopter was used to locate them and maneuver them to a safe place. Two ewes and four rams were captured with a net gun, and blood samples were taken. These samples contain valuable data that will give scientists information on disease prevalence, radionuclide burdens and how different herds in southern Nevada are related.

Five of the sheep were fitted with radio collars that record their GPS locations six times a day. For a five-day period after each month, the collars record locations every hour so that scientists can evaluate fine-scale movements and habitat use. Later, when the sheep were released, the scientists watched in awe as the graceful animals sprinted over rocks and crags back into their desert home.

Derek Hall, NNSS senior scientist, said this was "a great collaborative effort between the Department of Energy and other agencies such as USGS, the Nevada Department of Wildlife and Nellis Air Force Base to gain valuable data about sheep populations on the NNSS and throughout southern Nevada."

Hall believes these sheep came from transplants in Spotted Range, Specter Range and Stonewall Mountain that preserved the species.

"We think those populations came in and filled a void on the Site. We believe these sheep are new." When asked about other animals at the Site, Hall said the mule deer and wild horses are other subjects being studied. He also said that greater numbers of antelope and wild burros have been observed, and he hopes to study the increase in those populations in the future.

"The information the sheep provide will give us new understanding of the ever-changing wildlife populations at the NNSS," he concluded.

Photo: NNSS Archive

**Three desert bighorn sheep sprint up a hill at the NNSS. Notice how they blend with their environment.**

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# News Briefs

## NNSS' Martin Discusses Nuclear Thermal Propulsion Ground Tests with UNLV Students

Nuclear thermal propulsion has been recognized as an enabling technology for missions to Mars and beyond. However, one of the key challenges of developing a nuclear thermal rocket is conducting verification and development tests on the ground.

Chip Martin, director of Nuclear Operations for the Nevada National Security Site (NNSS), spoke with science and engineering students at the University of Nevada, Las Vegas (UNLV), about such tests happening at the Site. Martin explained how the NNSS conducts these tests and what their scientists are looking for.

Photo: Ke-Xun "Kevin" Sun

For example, one concept, the vertical borehole, uses natural soil characteristics, such as alluvium at the Site, to provide a natural filter for nuclear rocket exhaust during ground testing. However, the cost of this surface-based proposal is unlikely to be affordable. An alternative, fully underground test concept is proposed that will achieve the critical test objectives, but without the prohibitive cost associated with a surface nuclear test facility.

Martin is among many speakers from the NNSS to reach out to UNLV students through these keynote lectures. The purpose is for students to familiarize themselves with the Site's mission and how it fits with their career choices in their field.

## Housing and Custodial Logs Hundreds of Safe Days

As of this writing, the NNSS Housing and Custodial has now logged more than 660 days without any safety incidents.

Earlier, passing their milestone of 500 days was impressive. In fact, Housing and Custodial had reached 562 days of incidence-free days by February. That was when Michael Madrid, Housing, Feeding and Custodial (HFC) manager within the Operations & Infrastructure directorate, and his staff celebrated their milestone at the Mercury Steak House. There, they enjoyed a surf-and-turf lunch, courtesy of the HFC division. Said Madrid, "Before, Housing and Custodial had slips and falls. After that, we set out for better, more active safety awareness. We made posters, employees marked their progress on calendars, and we did safety slogans and the like. We took it step by step: Reach 100 days without incidence, then 200 days, then 300. Our ultimate goal was to reach 500, so to achieve 562 days is reason to celebrate."

The safety record at the Feeding department is

*Continued on page 5*

# U25X Tunnel Recovered from 2015 Storm

**By Lory Jones, *OneVoice* Editor**

On Oct. 18, 2015, a flash flood called the "1,000-year flood" roared through the Mohave Desert, from California to Nevada—and onto the Nevada National Security Site (NNSS). Dumping about three inches of rain in three hours, the storm wreaked considerable damage to the Site's roads and infrastructure, including U25X, a significant tunnel in Area 25 that is used for a project called End-to-End (E2E).

The storm washed out certain roads and flooded some facilities. Approximately four miles of access road from Lathrop Wells to U25X tunnel was destroyed. The tunnel entrance was buried under a 10-foot-high debris pile. The emergency exit was also buried, and the internal condition of the tunnel was unknown because it could not be accessed.

The Global Security Directorate management quickly developed a plan to remediate the erosion damage and gain entry into the tunnel.

Under the leadership of Kevin Olsen, NNSS supervisor of Roads, Grounds, Water and Waste, remediation began Nov. 30 to open a single lane road to the tunnel and clear the debris from the tunnel entrance and emergency exit. The entire four-miles of U25X Tunnel Access Road was graded, as well as the tunnel entrance apron.

This photo was taken Dec. 1, showing how the rain washed dirt into the tunnel's entrance.


Photos: Gerald Schotik

The tunnel entrance after the recovery operation. Notice the water-line stretching across the doors.

Under the leadership of Tom Seaver and his crew, entry into the tunnel was achieved Dec. 16. When they opened the tunnel, they found very little damage. Some cleanup of mud and debris was required in the first 100 feet or so. The tunnel ceiling appeared to be in good shape.

In 11 days, they completed the remediation ahead of schedule and at a cost that was less than one-quarter of the original estimates. The tunnel is once again in service.

"This is a remarkable success story. A motivated NNSS pulled together to put things right, ahead of schedule, under budget and with that 'can-do' attitude to make our End-to-End Project achieve its milestone experiments without interruption," said Paul Guss, E2E campaign manager.

Added Bob Okagawa, principal project manager who oversees portions of the E2E Project, "An amazing aspect of this story was the number of NSTec personnel involved who produced results in a very short time. This success can only be attributed to the experienced, dedicated employees and their first line supervisors. This achievement was performed while maintaining a total safety approach."

E2E is a National Nuclear Security Administration project that evaluates technologies.

# NNSS Excess Property Program Continues

**By Jeff Donaldson, NSTec**

A program at the Nevada National Security Site (NNSS) that allows the Asset and Material Management Department to eliminate unused equipment is helping to not only clear space, it will bring in valuable revenue to aid future missions.

Craig Mercadante, manager of NNSS' excess property effort, said that his staff removed more than 600 items in February from areas around the NNSS and the North Las Vegas facility. The total value of the items topped out at more than $858,000.

Among the most recent collections included chairs, cabinets, high-voltage power supplies, vacuum pumps and cathode generators. The group filled a 48-foot truck with baskets and pallets of unused equipment that also included refrigerators. The materials were removed from Building A4 and a trailer in North Las Vegas (NLV).

Photo: Tom DePrizio

Surplus from the A4 storage yard are loaded on a truck at the NLV facility.

"Removing the items in February was a major part of our cleanup of the Defense Experimentation and Stockpile Stewardship (DE&SS) program," Mercadante said. The shipment, which is sold to recycling companies and other groups, is part of what has been a five-year effort so far to rid the NNSS of equipment and supplies that has sat idle for decades.

The program to identify and dispose of surplus equipment and materials has resulted in more than $4 million in revenue, as well as a reduction in NNSS' environmental management costs by more than $9 million.

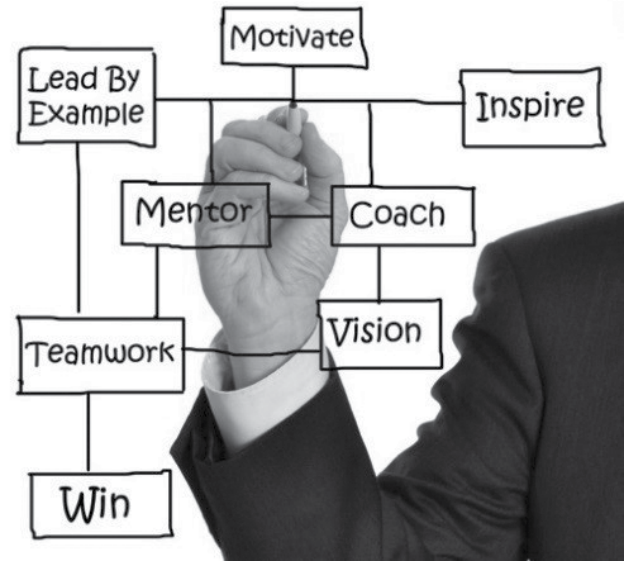
# Mentoring Opportunities for NSTec Employees

**By *OneVoice* Staff Reports**

Do you ever wish you had someone you could talk to about your career development? Are you new to the workforce and looking for guidance in navigating the culture? Are you interested in developing your leadership skills and expanding your network throughout the organization? If you are a National Security Technologies (NSTec) employee and answered "yes" to any of these questions, the NSTec Mentoring Program may be for you.

The NSTec Mentoring Program capitalizes on the strengths and experiences of NSTec's workforce as a learning asset for employees engaged in professional and personal development. Mentoring isn't just for new employees or those entering the workforce for the first time—employees at all levels can benefit from the program. Currently, there are 48 registered mentors willing to share their knowledge and experience with other employees. Getting involved is easy!

Whether you would like to enroll as a mentor or a mentee, it starts with a brief program orientation. Mentors are required to complete some additional training through SkillSoft. Mentees are asked to complete a Mentee Prep Sheet, which outlines their current position and career aspirations. Once the orientation is complete, the Mentoring Program coordinator works with the employee to find an appropriate match in the system. From there, the mentor and mentee establish an initial meeting, and the relationship is born. Mentoring




relationships can last as long as they remain beneficial for both the mentor and mentee.

The NSTec Mentoring Program is open to all NSTec employees and is entirely voluntary. If you would like more information, you can visit the program page by typing "mentoring" into Daily Needs on inSite. The page includes the list of available mentors, as well as a variety of resources for both mentors and mentees.

If you would like to enroll in the program, contact the Mentoring Program Coordinator Barrett Shaw at (702) 295-1664 or shawba@nv.doe.gov to get started.

# Martin Receives ASME Recognition for Software QA Requirements

**By *OneVoice* Staff Reports**


Chip Martin

Chip Martin, director of National Security Technologies (NSTec)'s Nuclear Operations directorate, received a new honor recently. Martin was recognized by the main committee of the American Society of Mechanical Engineers (ASME) for reorganization of the American National Standards' software quality assurance requirements. Martin is a member of the ASME's NQA-1. NQA-1, *Quality Assurance Requirements for Nuclear Facility Applications*, is a Standard administered under the authority of the American National Standards Institute.

Since the start of his time at NSTec, Martin has been working with the Software Quality Assurance Subcommittee of the NQA-1 Main Committee to develop new, or modify existing, requirements and guidance that address current industry practices for software engineering. The proposed scope includes both real-time applications (such as monitor, instrumentation, control and safety system software) and non-real time applications (such as design, engineering analysis and certain management support software). Currently, he is continuing his endeavors in improving the Standard by working to develop guidance on grading requirements, enabling them to address applications other than those of high integrity.

## Housing and Custodial Logs

*Continued from page 3*

also impressive: 463 incidence-free days. They are close to reaching their goal of 500 days.

"We have a calendar at each pre-shift location noting the daily accomplishments and making it a visual reality, strongly encouraging daily safety. In addition, during our safety meetings and trainings, we have our team members engaged and participating. At times, a team member will present the safety topic pertaining to their line of training and knowledge. For example, our chef will show how to use a knife, or our butcher will demonstrate how to clean a meat slicer. We promote involvement, participation, team work and awareness. Having this engagement makes training and meetings fun and educational, and they promote ownership," said Dan Mykovich, HFC supervisor.

## Nevada Science Bowl: Davidson Academy, Hyde Park head to D.C. for Championship

Davidson Academy of Reno, Nev., roared to victory on Feb. 6 in the high school division of the 2016 Nevada Science Bowl. Likewise, Hyde Park Middle School of Las Vegas scored their victory March 5 in the middle school division.

Davidson defeated Las Vegas' Clark High School in the championship match, winning the $5,000 first prize for their math/science department. Hyde Park won $1,000 for its math/science department. Both Davidson and Hyde Park will represent Nevada in the Department of Energy (DOE)'s National Science Bowl April 28 - May 2 in Washington, D.C.

Nevada Science Bowl sponsors include: DOE National Nuclear Security Administration Nevada Field Office, National Security Technologies, Northrop Grumman, Navarro Research & Engineering, the U.S. Department of the Interior, Centerra-Nevada, VegasPBS and the National Atomic Testing Museum.

Photo: Dan Burns

Davidson Academy contestants were (l-r), Matthew Bauer, Rinik Kumar, Haydn Bradstreet, Paolo Adajar, Eric Liu and Coach Brett Guisti.

## In Memoriam

**Doug Phillipson**
**NSTec, *1958 - 2016***

## NvE Calendar of Events

- **May 7** – 65th Anniversary Open House at the NNSS
- **May 14 – June 25** – Family Days at the National Atomic Testing Museum. Free weekend admission and a guided tour for Nevada Enterprise employees and their families. Must sign up to participate.

# NSTec Honors Employees with Performance Awards

**By *OneVoice* Staff Reports**

**National Security Technologies (NSTec) recently presented its Performance Awards to individuals and teams for their outstanding accomplishments during the second half of fiscal year 2015. NSTec President Jim Holt presented many of these awards during the company's all-hands meetings in January. Managers also presented the awards to their employees.**

**Employees in team photos are noted left to right. Photos: Savitra Candley, Susan Cyr, Thomas DePrizio, Kirsten Kellogg and John Meade**

## Individuals

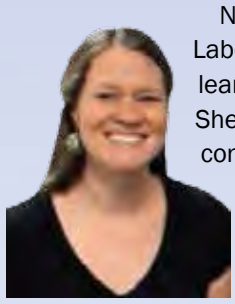
### Christie Rodriguez

Christie Rodriguez proposed purchasing a $328 check scanner which would automatically deposit checks into NSTec's contract bank account. This was a vast improvement over Accounts Receivable (AR) personnel hand-carrying deposits, usually totaling $1 million or more, to a local bank branch in North Las Vegas. Rodriguez worked with the Information Technology and Cyber Security divisions to ensure the scanner met all of their requirements. The scanner so far has saved the AR personnel approximately 10 hours a month by not traveling to the bank, in addition to increasing their physical safety and security. Finance estimates that the savings to the contract will be approximately $6,000 annually, in addition to a more streamlined and efficient process, with an investment of less than $675.

### David Pechulis

Dave Pechulis had the personal initiative to inspect items being placed for sale into the NSTec Online Auction. He removed used computer monitors, keyboards and similar items from the auction site to enhance productivity and/or reduce potential ergonomic issues. On his own initiative, Dave worked with warehouse personnel to develop a very innovative methodology where potential users can be advised of items being placed into auction. This avoided costs associated with having to purchase similar items in the near future. Based on current projections, Dave's actions resulted in cost avoidances of approximately $50 to $75K per fiscal year due to being able to reuse office furniture, cubicle partitions, work stations, keyboard trays and similar items. He introduced brand new toner cartridges back into the work environment for use versus being excessed, which could require NSTec to spend thousands of dollars to purchase new toner cartridges, as well as labor costs for procurement and shipping.

### Kristen Crawford

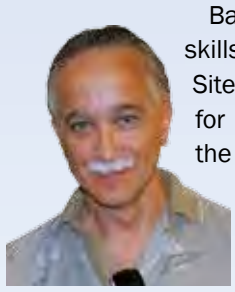


NSTec coworkers, colleagues from Los Alamos National Laboratory, and management from both organizations frequently leaned on Kristen during the Orpheus subcritical experiment. She guided them on laser safety, system documentation and configuration, operational checklists, daily classified operations, classified data transfer and optical back reflection measurements for fiber optic data cables. She motivates everyone around her through her constant striving for perfection, and continues to demonstrate strong mentorship and leadership skills way beyond her years of experience. Without Kristen's contributions, NSTec would have struggled to meet one of its FY15 Level 2 National Milestones, execution of the Orpheus subcritical experiment.

### Florin Secara

Florin Secara researched the high-density polyethylene (HDPE) pipe that Engineering was proposing to use as the replacement of a 10-inch compressed air line at U1a. He discovered that it would not respond well to the temperature and pressures attained by the air compressors. He provided to the Nuclear Maintenance manager the service pressure ratings in relation to temperature increases of the compressor. Engineering agreed that the HDPE would not be suitable. An HDPE vendor visit was canceled and the facility decided to move forward with an epoxy covered steel (recommended by Florin) as the compressed air line replacement. This resulted in a substantial cost savings.

### Michael O'Keeffe



Based on his keen intellect, expert planning and analytical skills, Michael O'Keeffe developed the Nevada National Security Site (NNSS) Protective Action Recommendation Card process for recommending protective actions that may extend beyond the boundary of the NNSS. This new tool allows for prompt, clear and concise protective action recommendations to be delivered in a very short period of time by using a series of pre-determined protective action rings overlaid on NNSS maps. O'Keefe then developed an implementation plan and led the effort accordingly. Michael's efforts directly contributed to a more intensive and useful strategy for the NNSS Emergency Response Organization to interact with adjacent jurisdictions and the State of Nevada in the event of general emergency at the NNSS. His tireless efforts to improve the NNSS Emergency Management program have directly resulted in improved protection of the citizens and environment of Southern Nevada and strengthened community partnerships through his interactions with NSTec's emergency management partners.

### Eric Huffman

Scientists at the National Ignition Facility (NIF) thought it would be great if they could use the multi-spectrometer they once used on the OMEGA Laser in Rochester, N.Y., on the NIF laser at the Lawrence Livermore National Laboratory. The problem was, with limited and in some cases no documentation available from the original design, they did not know how to make it happen. NSTec was approached for help, and Eric Huffman took on the challenge to redesign it. Not only did Huffman overcome several project hurdles because of the missing documentation, he has made the scientists extremely happy. His work will be featured in the Los Alamos National Laboratory high energy diagnostics report to headquarters. It is also being featured in the NIF quarterly report.

# Teams

## Orpheus Vessel Feedthrough Design and Qualification Team

The Vessel Feedthrough Team revolutionized the way vessel penetrations are designed and validated for research and development physics experiments conducted by NSTec in partnership with the National Weapons Laboratories. The team reduced the required penetration footprint on the vessel top cover by more than half, while significantly increasing the available data channel count per feedthrough. As a result, the diagnostics team collected more data than had ever been recorded for a vessel experiment, with many channels to spare along with sufficient design flexibility to keep up with an ever-expanding suite of optical diagnostics for subsequent vessel related experiments.

Joseph Delash, Bill Fritz, Kenneth Watts

## Papal Visit Nuclear Radiological Advisory Team (NRAT) Planning Team

Pope Francis' visit to Washington, D.C., in September 2015 became the largest National Special Security Event in United States history. The NRAT at the Remote Sensing Laboratory (RSL) at Andrews Air Force Base in Maryland was responsible for planning the National Nuclear Security Administration's response to the event and coordinating equipment and personnel from all DOE Radiological Assistance Program regions. The scale and complexity of this event, which dwarfed even Presidential inaugurations, required the development of new tools for planning and tracking, as well as long hours, strong team work and personal initiative. The team was responsible for the assignments, equipment, logistics and tracking of NNSA personnel and hundreds of pieces of gear. Although they were given little lead time, and were confronted with continual request changes from their interagency partners, their dedication to the mission's success and creative problem-solving set up a smooth operation.

With Jim Holt: Jerry Bogert, Vira Em, Arturo Maloco (front), Paula Lynch, Kenneth Whalum, David Chan, Wayne Word, Seuri Taruru and Virginia Virgil.

## Industrial Hygiene Team

The Industrial Hygiene (IH) Team went above and beyond their normal job duties, performance and/or expectations. This involved three instances. During a routine work area health hazard evaluation, IH personnel identified beryllium contamination in the screen rooms in the U1a underground complex. Recognizing a potential for widespread personnel exposure to beryllium, the team visited all suspected areas, conducted hazard/exposure assessments to include collecting air and surface samples, and made hazard abatement and control recommendations.

The IH team significantly improved the Toxic Hazard Work Permit Process by creating such annually for several commonly performed work activities. Also, IH scientists significantly contributed to the NSTec WBT [web-based training] Courses Development and Improvement project by developing web courses. Instead of paying a vendor to do this, IH helped NSTec save $32,000 per year for eight courses, or a $320,000 savings over a 10-year period.

## Preventive Radiological/Nuclear Detection (PRND) Team Operations Course Development and Delivery

The Domestic Nuclear Detection Office (DNDO), a Counter Terrorism Operation Support (CTOS) sponsor, tasked CTOS with developing a PRND Team Operations Course to train such teams in conducting operations that protect and secure critical infrastructure, large venues and special events from a radiological or nuclear event. This effort was done through a new approach to training development and delivery that merged two separate sponsors, the DNDO and the U.S. Department of Homeland Security/Federal Emergency Management Agency/National Preparedness Directorate. This provided training and saved money for both customers through this collaboration. This course was under a very strict and tenuous development timeline in order to get the product available for delivery to the Philadelphia Police Department in the preparation for the September 2015 Papal visit after piloting it first to the Los Angeles World Airport Police.

Conne Walton-Davison, Leslie Maison, John Brenner and David Pasquale with Jim Holt. Not pictured: David Dixon, David Kao and Shawn Spendlove.

Steven Burns, Jim Holt, Ricky Tindall and Douglas Trone. Not pictured: Ricky Medina, Brent Nordin.

## Alternative Fuel Management Program

The Fleet, Fuel and Equipment Service (FF&E) division of the Operations & Infrastructure directorate was rated fourth by the 2015 Best Fleets, Green Fleet Awards Organization. FF&E's Alternative Fuels Management Program (AFMP) was instrumental in the achievements recognized by the Best Fleets Organization.

The AFMP personnel increased renewable fuel consumption, alternative fueled vehicles, hybrid vehicles, electric vehicles and the reduction of petroleum fuel by the fleet. More than 80 percent of the NNSS vehicles are either alternatively fueled, hybrid electric or plug-in electric vehicles. Along with the alternative fuel increases and increases of these vehicles, the amount of petroleum fuel consumed at the NNSS has plummeted to 396,830 gallons in FY2015, from 1,328,957 gallons in FY2005.

## Teams *(continued)*

### The LO Optical Ranging System Project Team

This team took a site-directed research and development effort from being a conceptual project into a rack-mounted production environment supporting programmatic work in an extremely short amount of time. All work was done in-house to help expedite the project. Lawrence Livermore National Laboratory (LLNL) stakeholders said they were extremely happy with the outcome. The first test of this instrument in the field was on Shot 663F at LLNL's Site 300. The successful demonstration of this technology will evolve into future application for LLNL's Sierra Nevada subcritical experiment at the NNSS.

**Andy Mead, Vu Tran, Victor Johnson, Russell Knight and Mary Kucher. Not pictured: Troy James, Wayne Stolte.**

### Enterprise Assessment (EA) – Survey NSTec Material Control and Accountability and Security Team

NSTec's Material Control and Accountability (MC&A) and Security Team demonstrated superior performance in all areas during the 2015 DOE Safeguards and Security Inspection. MC&A was recognized for a well-administered program for controlling and accounting for nuclear materials. While NSTec's performance in the 2013 inspection was good, the performance in 2015 was even better. At the conclusion of the assessment, the Headquarters EA-22 team report noted that despite the increased workload and staff shortage, the strengths in the MC&A staff capabilities ensured that special nuclear material at the NNSS was effectively safeguarded. It was also stated that the safeguards program is operating effectively and the MC&A system elements are performing as intended.

The Classified Matter Protection and Control program was recognized for a much improved program and for the reductions in classified holdings. The Lock and Key Program showed vast improvement over previous internal and external assessments resulting in no issues identified. The Personnel Security program continued its best in class performance resulting in no issues identified. And Program Management was instrumental in the success of the survey with developing the Nevada Enterprise Security Conditions Plan, written and coordinated by NSTec. The strong collaboration with the Operations Command Center, emergency management and security were identified as a best practice.

**With Jim Holt: Kim Young (back), Teri Watson, Toni Davenport, Patrick Stevens (back), Nicki Burns, Julie Beck (back), Mary Alice Price, Keith Davenport (back), Laura Harris (back), Luci Fila, Gerry McCutcheon, Ruel Hicks (back), Ken Cooke (back), Genevieve Freeman, Steve Davis (back), Jolie Coleman, John Wright (back) and John Cuellar.**

### 90-Day Accumulation Area Response Team – NNSS Fire and Rescue and Unexploded Ordinance Team

NNSS Fire and Rescue (F&R) responded to a reported fire in Area 5, where the acting assistant chief (AC) determined that the fire was burning in several drums. The AC immediately had responding vehicles stop short of the incident and stage at a safe distance. After learning of the suspected chemical in the drums, the local emergency director developed the appropriate strategy of establishing barricade locations, denying entry and allowing the fire to burn itself out. The next day, a team was formed, comprised of F&R personnel, the NSTec Unexploded Ordinance Team (UXOT) and subject matter experts from several organizations to develop a Render Safe Operations plan.

**Douglas Clark**

NSTec UXOT designed and engineered specialized explosives to remotely breach two layers of drums and test sensitivity of the chemicals. The charges functioned as designed and successfully breached the drums without igniting the chemical contents. Also, to ensure there were no remaining chemicals presenting a potential explosives hazard, the UXOT constructed and placed several fueled charges to initiate a remote burn to treat the chemicals remaining in the five drums.

The render safe operation was a complete success with no injuries or collateral damage to infrastructure. This activity was truly an "outside the box" effort requiring significant coordination among several NSTec organizations.

**Timothy Rearich, Jim Holt, Brian Cirricione (back), Corey Wiley (back), Thomas Gascoigne, Dan Crays (Back) Wayne Word (back), Darrin Valentine, Chris Parker, William Nixon (back), Eugene Zolnay, Chris Hurt (back), Mike Worthen and Robert Sandoval. Not pictured: Quentin Aukeman.**

# NSTec, Centerra-Nevada Contribute toward Historical Foundation, Museum

**By *OneVoice* Staff Reports**

National Security Technologies (NSTec) donated $25,000 to the National Atomic Testing Museum (NATM) for its development of a master exhibit plan for additional space to highlight the current missions of the Nevada National Security Site (NNSS).

NSTec's donation will go toward the Nevada Test Site Historical Foundation (NTSHF)'s funding development of a master plan that will use the current exhibits focused on the Site's history, as well as new exhibits that will highlight the Site's current missions. These missions include nuclear weapons stockpile stewardship, homeland and global security programs, and environmental management.


Photos: Courtesy photos

Left to right: NATM President Michael Hall, NTSHF Chairman Troy Wade and NSTec President Jim Holt.


Left to right: Centerra-Nevada Environment Safety and Health Manager Bobby McGregor, Glasser, Centerra-Nevada Contractor Assurance System Specialist/Community Outreach Coordinator Roxie Frehner, Centerra-Nevada Contracts and Finance Director Trudy Rocha, Michael Hall, NTSHF Vice President Chuck Costa, Troy Wade, NTSHF President Linda Smith and NTSHF Vice Chairman Nelson Cochrane.

The gift will allow the NTSHF, in cooperation with NSTec, to hire a professional exhibit design firm to develop a conceptual plan for the exhibits, which will portray the current programs and activities at the NNSS. The exhibits will initially be located in the museum's temporary exhibit space, but eventually will be incorporated into its permanent exhibit area.

Also, Centerra-Nevada (photo, left) renewed its long-standing corporate membership in support of the museum at the platinum level ($5,000 - $9,999). Centerra-Nevada General Manager Martin Glasser and his staff presented "the big check" for $5,000 to the NATM.

# Newest Firefighters Join the NNSS Ranks

**By *OneVoice* Staff Reports**

On Feb. 12, Nevada National Security Site (NNSS) Fire and Rescue (F&R) Chief Charles Fauerbach held a special badging ceremony for three newest members of the F&R family. From left, firefighters Josh Campbell, Christian Cutolo and Omar Bikle, posing with F&R's vintage Seagrave fire engine, received their badges before more than 30 family and friends at the National Atomic Testing Museum in Las Vegas. All three firefighters received their training through the NNSS F&R Cadet Training program.

Photo: Bill Nixon

# DOE's MacWilliams Visits Southern Nevada Facilities

**By *OneVoice* Staff Reports**

Department of Energy (DOE)'s Associate Deputy Secretary John MacWilliams recently visited the Nevada National Security Site (NNSS) to review the various ways the NNSS contributes to the DOE's mission, including radiological detection, emergency management and stockpile stewardship.

and Kelly Cummins, senior advisor, Office of the Secretary.

NNSS Fire Chief Charles Fauerbach (photo below, right) explains NNSS's fire and rescue capabilities to MacWillams. The NNSS fire department personnel maintain certifications in structural firefighting, wild-land

Photos: Darwin Morgan

Piotr Wasiolek (photo above, left), Aerial Measuring System section manager at the NNSS Remote Sensing Laboratory in North Las Vegas, explained how sophisticated pods attached to the B-412 helicopter are used to measure radiation during surveys or an actual radiological event. With Wasiolek are (from left) Melissa Hunt, NSTec director of Global Security; MacWilliams;

firefighting, and hazardous and radiological responses. In addition, through an agreement with Nye County, Nev., the fire and rescue team provides support for highway accidents and transfer of patients from rural communities to Las Vegas hospitals. Pictured with MacWilliams and Fauerbach are Katharine Sartorius (left), special advisor to MacWilliams, and Hunt.

# Standing During Meetings: Enterprise Risk Management Review

**By *OneVoice* Staff Reports**

A new study found that compared with sitting, groups who held meetings standing up were more excited and less territorial about ideas, both of which lead to better elaboration of information, indirectly benefitting group performance.

The study researchers from Olin Business School at Washington University in St. Louis, Mo., reported their findings in the *Social Psychological and Personality Science* journal.

Recently at a National Security Technologies (NSTec) Enterprise Risk Management Review meeting—a meeting that lasts anywhere between two to three hours—John Aadland gave the safety moment brief, discussing posture and sitting. He also talked about how, when he chooses to stand, some people aren't sure how to handle someone standing, even if he tells people why.

"Not only did John do an outstanding job talking about the subject, people listened and took action. We had a variety of people stand up during the meeting, which, I believe, contributed to the effectiveness of the meeting. I imagine the message will spread," said meeting participant TK O'Geary.

The Enterprise Risk Management Review meeting that was scheduled for three hours finished in just over two hours, adding to increased productivity. "There's a correlation between individual engagement, alertness and the dynamic activity of standing. When the body is active, it engages the cardiovascular system, oxygen intake increases and physiological arousal increases. The meetings are more productive and shorter, and we share more information and are more energized," said David Pechulis, NNSS ergonomist.

JD Daniels, manager in Emergency Management, Safeguards & Security, also holds standing meetings with his group. "Our meetings are more productive with greater collaboration, more energy and are shorter than sitting meetings. I think they're great."

Aadland has been a standing-desk user for seven months. He believes that using a standing desk and the health benefits he has realized during the past seven months were some of the drivers in his decision to present the topic of posture and sitting. "At first they chuckled, but then as the meeting progressed, I noticed others standing, including directors. I was like, 'Oh, wow they got it,'" he said.

Aadland's safety moment brief gave two other great takeaways. When an individual is introduced to a new idea or concept and they consistently experience positive benefits, they become an enthusiastic fan of standing. Second, when they share that information for others to benefit and experience, that's called organic growth. Organic growth drives positive change, becoming the vehicle for greater achievement. In this case, there was synergy through increased comfort, participant engagement, knowledge sharing and improved productivity in meetings.

Standing during a meeting is not an absolute requirement. People should always feel comfortable sitting or standing. If you decide to conduct a standing meeting, get ready to experience the synergy and feel free to share your experiences with others.

65th Anniversary of the Nevada National Security Site

# 65TH THROWBACK: RECALLING THE SITE "BACK IN THE DAY"

In its souvenir edition, *OneVoice* recently celebrated the Nevada National Security Site's 65th anniversary. In continuing this historic celebration, *OneVoice* features projects and programs unique to the Site.

# BREN TOWER: ONCE THE TALLEST STRUCTURE WEST OF THE MISSISSIPPI

**At 1,527 feet, the BREN Tower was the largest free-standing structure west of the Mississippi—taller than the Empire State Building and the Eiffel Tower.**

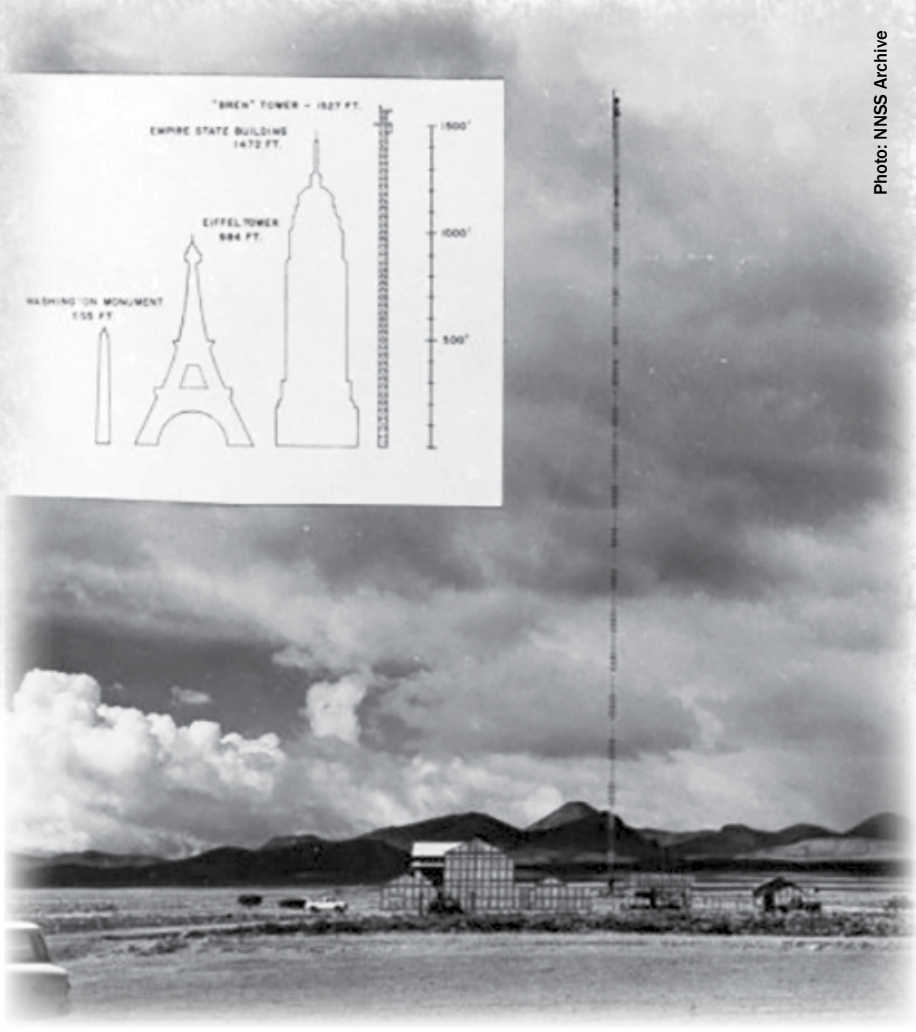



Photo: NNSS Archive

BREN derived its name from the initials of a 1962 experiment for which it was constructed: Bare Reactor Experiment - Nevada. BREN was a major project within the Civil Effects Test Operation of the Atomic Energy Commission's Division of Biology and Medicine.

The tower's primary purpose was to provide a method for accurately estimating radiation doses received by survivors of the atomic bombings of Hiroshima and Nagasaki in Japan. The tower's height was determined by the altitude at which the atomic bomb "Little Boy" was detonated over Hiroshima.

A small unshielded (bare) reactor was mounted on an outside hoist car to move to various levels of the tower. For realism, a mock Japanese village was built near the base of the tower (only some of the original village structures remain today) so the shielding effects of various types of housing styles and materials could be studied in estimating human radiation doses. This vast effort became a cornerstone of modern radiation estimates.

Photo: NNSS Archive

BREN Tower before its demolition May 23, 2012.

Since the 1962 experiment, the tower had been used for many other scientific purposes.

BREN Tower was demolished May 23, 2012. In its place remain the concrete foundation and a single leg, commemorating the tower's storied history. Some of its salvaged items are now on display at the National Atomic Testing Museum in Las Vegas, Nev.

Photo: Atomic Energy Commission

Harnessed while climbing the tower.

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# RSL Emergency Response Experts Give Presentations at International Conference in Vienna

**By Ariel Borders, NSTec**

Last Fall, eight radiological emergency response experts from the Remote Sensing Laboratory (RSL) attended the International Conference on Global Emergency Preparedness and Response in Vienna, Austria. These experts work on various emergency response projects around the world for the Department of Energy's National Nuclear Security Administration (DOE/NNSA) NA-46 International Emergency Management and Cooperation (IEMC) Program. Vince McClelland, NA-46 director, led the DOE/NNSA delegation.

RSL's participants included James Butler, Rica Salcedo, Rick Maurer, Piotr Wasiolek, Colin Okada, Mike Reed, Mike Taylor and Ben Sher. The team provided three oral presentations on the International Radiological Assistance Program for Emergency Response Training Program, Adjudication of Radiation Alarms on Cargo Containers, and the International Aerial Measuring System Training Program. The team also presented posters on DOE International Assistance Reach-back Capabilities, Aerial Measuring Systems and the International Radiological Mapping Application.

The IEMC program provides training and outreach on radiological emergency response to the international community to enhance worldwide safety and security.

The RSL team also developed and presented a display on "International Assistance for Nuclear Security Operations at Major Public Events." The display included representative radiation detection instrumentation used for nuclear security operations at major public events. RSL provides scientific and technical assistance at major public events around the world, most recently at the FIFA World Cup (June 2014) in Brazil and the Summit of Americas (April 2015) in Panama.

The conference was attended by more than 400 emergency response experts. It also provided a forum for the exchange of technical information and experiences to promote effective preparedness for efficient nuclear/radiological responses. Dr. Steven Aoki, DOE/NNSA deputy undersecretary for Counterterrorism and Counterproliferation, provided a keynote address on nuclear/radiological safety and security. "This conference provided an excellent opportunity for RSL scientific and technical experts to share information on the RSL-led international training courses, as well as best practices and experience gained from Radiological Emergency Response Operations with our international partners," said team leader Rick Maurer.

The RSL presentations and posters can be viewed at the conference website: http://www-pub.iaea.org/iaeameetings/45986/International-Conference-on-Global-Emergency-Preparedness-and-Response.

Since 2005, RSL scientific and technical experts have participated as instructors in training courses and workshops for thousands of radiation specialists, health physicists, first responders and emergency managers from 75 countries, the International Atomic Energy Agency and the North Atlantic Treaty Organization.


Photo: RSL

Left to right: Rica Salcedo, Ben Sher, Mike Taylor, James Butler, Rick Maurer and Colin Okada.

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